FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M08545	Client:	Alaskan Copper Works
Date Received:	03/22/12	Project:	Metro Self Monitor M08545, F&BI 203304
Date Extracted:	03/23/12	Lab ID:	203304-01 x10
Date Analyzed:	03/23/12	Data File:	203304-01 x10.047
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	75	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	548
Nickel	471
Copper	786
Zinc	58.6

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Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Alaskan Copper Works
Date Received:	Not Applicable	Project:	Metro Self Monitor M08545, F&BI 203304
Date Extracted:	03/23/12	Lab ID:	I2-200 mb
Date Analyzed:	03/23/12	Data File:	I2-200 mb.040
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Nickel	<1
Copper	<1
Zinc	<5

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Date of Report: 03/28/12
Date Received: 03/22/12
Project: Metro Self Monitor M08545, F&BI 203304

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 203293-07 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Chromium	ug/L (ppb)	20	4.76	103 b	98 b	71-130	5 b
Nickel	ug/L (ppb)	20	3.12	95	93	71-120	2
Copper	ug/L (ppb)	20	2.80	91	86	52-134	6
Zinc	ug/L (ppb)	50	5.48	92	88	51-142	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	ug/L (ppb)	20	109	80-119
Nickel	ug/L (ppb)	20	104	83-119
Copper	ug/L (ppb)	20	104	81-120
Zinc	ug/L (ppb)	50	102	82-120

AKC-0003929

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Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

AKC-0003930

203304

SAMPLE CHAIN OF CUSTODY

HE 03/22/12 AIY

Page # ____ of ____

Send Report To: Gerard Thompson
Company: Alaskan Copper Works
Address: 628 S. Hanford St
City, State, ZIP: Seattle WA 98134
Phone #: 206-571-6033 Fax #: 206-382-4809

SAMPLERS (signature):

PROJECT NAME/NO.: METRO Self Monitor

PO #: M08545

REMARKS:

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☒ RUSH 4 day
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

ANALYSIS REQUESTED

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Hg Cu Pb Zn					Notes
M08545	01	3/22/12	12:30	H2O	1												

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gerard Thompson	ACW	3/22/12	1:34pm
Received by:	Nhan Phan	FEBI	3/22/12	✓
Relinquished by:				
Received by:				

Samples received at 16 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

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AKC-0003931

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ENVIRONMENTAL CHEMISTS

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e-mail: fbi@isomedia.com

March 28, 2012

Gerald Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on March 22, 2012 from the Metro Self Monitor M08545, F&BI 203304 project. There are 4 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ACU0328R.DOC